

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
16 June 2005 (16.06.2005)

PCT

(10) International Publication Number
WO 2005/054948 A2

- (51) International Patent Classification: G03F
(21) International Application Number: PCT/EP2004/052769
(22) International Filing Date: 3 November 2004 (03.11.2004)
(25) Filing Language: English
(26) Publication Languages: English
(30) Priority Data:
03445141.9 5 December 2003 (05.12.2003) EP
60/481,752 8 December 2003 (08.12.2003) US
(71) Applicant (for all designated States except US): OBDO-
CAT AB [SE/SE]; P.O. Box 580, S-201 25 Malmö (SE).
(72) Inventors; and
(75) Inventors/Applicants (for US only): HEIDARI, Babak
[SE/SE]; Södra Ljungvägen 10, S-244 65 Furulund (SE).
BECK, Marc [DE/SE]; Fägelundsvägen 19, S-226 53
Lund (SE).
(74) Agents: LINDBERG, Olle et al.; Albihns Malmö AB,
Patent Department, P.O. Box 4289, S-203 14 Malmö (SE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

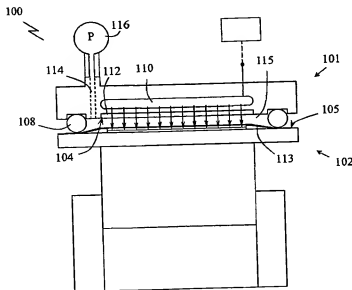
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,

[Continued on next page]

(54) Title: DEVICE AND METHOD FOR LARGE AREA LITHOGRAPHY



(57) Abstract: Apparatus and method for transferring a pattern from a template (10) having a structured surface to a substrate (12) carrying a surface layer of a radiation polymerisable fluid (14). The apparatus comprises a first main part (101) and a second main part (102) having opposing surfaces (104;105), means for adjusting a spacing (115) between said main parts, support means (106) for supporting said template and substrate in mutual parallel engagement in said spacing with said structured surface facing said surface layer, a radiation source (110) devised to emit radiation into said spacing. A cavity (115) has a first wall comprising a flexible membrane (113) devised to engage said template or substrate, and means (114; 116) are provided for applying an adjustable overpressure to a medium present in said cavity, whereby an even distribution of force is obtained over the whole of the contact surface between the substrate and the template.

CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
- of inventorship (Rule 4.17(iv)) for US only

Published:

- without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.